

REMARKS

This responds to the Office Action dated January 26, 2010. Claims 1 and 22 are amended; no claims are canceled and no claims are added. As a result, claims 1-46 are now pending in this application, of which claims 24-38 have been withdrawn by the Examiner.

Interview Summary

Applicant thanks Examiner Alyssa Alter for the courtesy of a telephone interview on April 23, 2010 with Applicant's representative Sarvesh J. Nadkarni. The 35 U.S.C. 112 rejections of claims 1 and 7 and Applicant's remarks were discussed. Proposed amendments were discussed along with the cited reference Seguine et al., (US 6,185,450 B1). Examiner Alter suggested revising the amendments for further clarity over the prior art. In view of the present claim amendments, Applicant respectfully requests reconsideration and allowance of all presently pending claims.

Request for Telephonic Interview

If the present claim amendments do not result in allowance of all claims, then Applicant kindly requests a telephonic interview with the Examiner and Applicant's representative, Suncel Arora, to help expedite examination.

The Rejection of Claims Under § 112

1. Claim 1 was rejected under 35 U.S.C. 112, second paragraph, for indefiniteness. The Office Action states that "claim 1 recites a cardiac rhythm management system, but only mentions a sensing circuit" and "since there is not means claimed to provide therapy or 'management' of a sensed condition, the examiner considers the claim to be incomplete." The Office Action further states "if there is no recitation of means for 'management' the examiner recommends changing the preamble of the claim toward a 'cardiac monitoring system.'" Accordingly, claim 1 has been amended to recite a cardiac rhythm "monitoring or management" system. Applicant notes that at least some examples can optionally include a therapy circuit 215,

such as shown in FIG. 2 of the Application. In sum, Applicant respectfully requests withdrawal of this rejection of claim 1

2. Claim 7 was rejected under 35 U.S.C. 112, second paragraph, for indefiniteness. The Office Action states “it is unclear if the Applicant has additional sensing circuitry to detect the T wave or how the T wave is sensed, since the previous claim 3 detects the ‘QRS complex.’” The Office Action’s reasoning appears to take the position that because the sensing circuit has applied a detected QRS complex in claim 3, claim 7 must recite additional sensing circuitry to detect and/or apply the T wave or at least describe how the T-wave is sensed in order to avoid indefiniteness. Applicant respectfully disagrees with this interpretation and traverses this rejection for the reasons stated below.

As stated previously in the Response to Final Office Action dated October 12, 2009, the sensing circuit can be used to detect a heart signal, which includes *both* a QRS complex and a T-wave. Applicant’s specification clearly states the sensing circuit is “for sensing a heart signal” (See Applicant’s specification at least at page 3 lines 9-11) and specifically senses “intrinsic heart signals.” (See Applicant’s specification at least at page 7, lines 25-26.) Applicant’s specification clearly indicates that intrinsic heart signals can include “various ‘events’ including depolarizations (e.g., P-waves and QRS complexes), and also including repolarizations (e.g., T-waves).” (See, e.g., Application at page 2, lines 11-25.)

With respect to the claims, there is clear support in the specification that the sensing circuit is configured for sensing an intrinsic heart signal (as recited in claim 1, and supported by Applicant’s specification at page 7, lines 25-26), and an intrinsic heart signal can include various events including “QRS complexes” (as recited in claim 3 dependent on claim 1, and supported by Applicant’s specification at page 2, line 23-24) and “T-waves” (as recited by claim 7, indirectly dependent on claim 3, and supported by Applicant’s specification at page 2, lines 23-25).

In contrast, the Office Action appears to imply that claim 3 applies the QRS complex to the exclusion of all other portions of the heart signal. In the Response to Arguments section, the Office Action states “claim 3 narrows the scope of the heart signal to the QRS complex” and “this sensing of the QRS complex *excludes* the T wave.” However, this interpretation of claim 3

is clearly narrower than the requisite broadest reasonable interpretation of the claim (See MPEP 2111) and appears to erroneously add unreasonable limitations clearly not recited in the claim.

As currently presented claim 3 states:

The system of claim 1, in which the sensing circuit is configured such that the frequency response includes a bandwidth that is time-dependent for the first time period, and the first time period is initiated by at least one of the detected pacing therapy event and detected evoked and detected intrinsic QRS complexes of the heart chamber contraction of the heart signal.

Nowhere in claim 3 is it suggested that the remainder of the heart signal is discarded, unusable, or excluded upon a portion (e.g., the QRS complex) being applied, nor is this notion supported anywhere in Applicant's specification, as is evidenced above. The Office Action appears to have made this assumption and/or interpretation independent of what is stated in the presently submitted claims and specification. Applicant respectfully submits the sensing circuit of claim 7 can be reasonably interpreted to apply portions of the heart signal (e.g., T-wave) detected in claim 1, that may not be explicitly recited in claim 3.

In sum, because the recitations of claim 7 are fully supported by Applicant's specification, and because the Office Action's interpretation of the claim is inconsistent with the language in the specification and appears to add limitations to the claim thereby failing to offer the broadest reasonable interpretation to the claim as required by the MPEP, Applicant respectfully submits claim 7 is sufficiently definite such that it is compliant with 35 U.S.C. 112, second paragraph.

The Rejection of Claims Under § 102

Claims 1-7, 11-23 and 39-46 were rejected under 35 U.S.C. 102(e) for anticipation by Seguire et al. (US Patent No. 6,185,450). Applicant respectfully traverses this rejection and submits there is presently no *prima facie* case of anticipation under 102 since Seguire does not disclose each and every recitation presently provided in the independent claim.

Applicant cannot find in Seguire temporary adjustment of a frequency response (reduced sensitivity) followed by gradual restoration of the frequency response during a time period that is less than or equal to 500 milliseconds such that the frequency response is restored during the same cardiac cycle as the initiating event. Seguire relates to a monitoring circuit for restoring

the proper processing of ECG signals after detecting saturation of the amplifiers by disruptive defibrillation or pacing pulses. (See Seguire at col. 4, lines 25-35 and at Abstract.) Seguire's monitoring circuit uses a switch for switching the frequency response curve of the monitoring circuit from a first position having a slow response curve in order to properly monitor the ECG waveforms, to a second position causing the monitoring circuit to have a fast frequency response curve and thereby quickly bringing the monitoring circuit's amplifier out of saturation and restoring ECG waveform monitoring. (See Seguire at Abstract.) Seguire's operation is shown in Seguire FIGS. 7A and 7B.

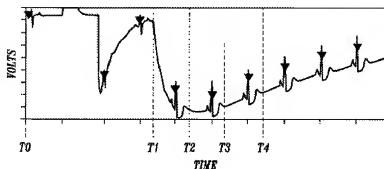


Fig. 7A

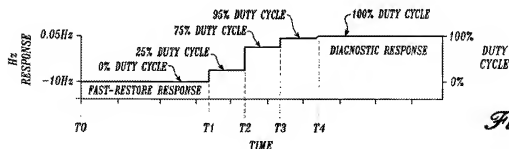


Fig. 7B

(Seguire at FIGS. 7A and 7B.) Upon detection of a defibrillation pulse at T0, Seguire shifts from a 0.05Hz highpass filter pole to a 10 Hz highpass filter pole, gradually returning to the original frequency response at T4, by which time at least six or seven cardiac cycles have passed, as seen by the arrows indicating QRS complexes in FIG. 7A of Seguire. Therefore, Seguire does not restore frequency response within the same cardiac cycle, as presently recited in claim 1, meaning that Seguire could miss detecting multiple QRS complexes. Further, Seguire does not restore frequency response within a time period that is less than or equal to 500 milliseconds,

as presently recited in claim 1, which would provide restoration of frequency response in the same cardiac cycle for a wide range of expected heart rates (e.g., up to about 120 beats per minute), unlike Seguine. In fact, Seguine expressly teaches away from a more quick restoration of the frequency response, since Seguine states that would not meet Seguine's objective of avoiding producing erroneous QRS detect marks. (See Seguine at col. 4, lines 38-42.) In fact, Seguine expressly states that this is a requirement:

The above description addresses why it is important to shift the frequency response pole of the circuit (e.g., from the slow 0.05 Hz response needed for proper ECT heart monitoring to the fast 10 Hz response needed to unsaturated the amplifiers). The problem of why this pole shift must be done relatively slowly will now be described relative to the second aspect of the invention. The second aspect of the invention, as described above, is that erroneous QRS detect marks are eliminated by incrementally sliding the frequency response pole from one position to the other.

(Seguine at col. 6, lines 32-41.) Thus, because Seguine fails to meet all elements presently recited or incorporated in these claims, and further because Seguine in fact expressly and directly teaches away from restoring frequency response within the same cardiac cycle, and within a time period that is less than or equal to 500 milliseconds, Applicant respectfully submits that no *prima facie* case of anticipation presently exists with respect to these claims. Accordingly, Applicant respectfully requests withdrawal of this rejection of these claims.

The Rejection of Claims Under § 103

Claims 8-10 were rejected under 35 U.S.C. 103(a) over Seguine et al. (US Patent No. 6,185,450 B1). Applicant respectfully traverses this rejection on the grounds that no *prima facie* case of obviousness presently exists with respect to these claims because all elements are not present in Seguine, and because Seguine directly teaches away from the claims, as explained above with respect to the §102 rejection. In sum, Applicant respectfully requests withdrawal of this rejection of claims 8-10.

Reservation of Rights

In the interest of clarity and brevity, Applicant may not have equally addressed every assertion made in the Office Action. However, this does not constitute any admission or

acquiescence. Applicant reserves all rights not exercised in connection with this response, such as the right to challenge or rebut any tacit or explicit characterization of any reference or of any of the present claims, the right to challenge or rebut any asserted factual or legal basis of any of the rejections, the right to swear behind any cited reference such as provided under 37 C.F.R. § 1.131 or otherwise, or the right to assert co-ownership of any cited reference. Applicant does not admit that any of the cited references or any other reference of record are relevant to the present claims, or that they constitute prior art. To the extent that any rejection or assertion is based upon the Examiner's personal knowledge, rather than any objective evidence of record as manifested by a cited prior art reference, Applicant timely objects to such reliance on Official Notice, and reserve all rights to request that the Examiner provide a reference or affidavit in support of such assertion, as required by MPEP § 2144.03. Applicant reserves all rights to pursue any cancelled claims in a subsequent patent application claiming the benefit of priority of the present patent application, and to request rejoinder of any withdrawn claims, as required by MPEP § 821.04.

CONCLUSION

Applicant respectfully submits that the claims are in condition for allowance, and notification to that effect is earnestly requested. The Examiner is invited to telephone the undersigned at (612) 373-6951 to facilitate prosecution of this application.

If necessary, please charge any additional fees or deficiencies, or credit any overpayments to Deposit Account No. 19-0743.

Respectfully submitted,

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Date July 14, 2010

By



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CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being filed using the USPTO's electronic filing system EFS-Web, and is addressed to: Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on this 14th day of July, 2010.

Kate Gannon

/ Kate Gannon /

Name

Signature